California Regional Water Quality Control Board
Santa Ana Region

September 17, 2004

ITEM: 11

SUBJECT: Waste Discharge Requirements for the Orange County Sanitation District's Reclamation Plant No. 1 and Treatment Plant No. 2, Order No. R8-2004-0062, NPDES Permit No. CA0110604

Time Schedule Order No. R8-2004-0067 for Orange County Sanitation District

DISCUSSION:

On August 13, 2004, the U.S. Environmental Protection Agency, Region IX (USEPA) and California Regional Water Quality Control Board, Santa Ana Region (Regional Board) jointly conducted a public workshop for the re-issuance of an NPDES permit/Waste Discharge Requirements, Order No. R8-2004-0062, NPDES Permit No. CA0110604, to Orange County Sanitation District (OCSD). At the August 13 Board meeting, the Regional Board also conducted a workshop regarding the issuance of a concurrent Time Schedule Order (TSO) No. R8-2004-0067, which specifies a time schedule for compliance with certain terms of the reissued NPDES permit and Waste Discharge Requirements. The purpose of the workshop was to solicit public comment on the proposed NPDES permit/Waste Discharge Requirements and the proposed Time Schedule Order.

The attached Fact Sheet provides detailed information concerning the OCSD facilities and the regulatory basis for the requirements proposed. TSO No. R8-2004-0067 specifies an aggressive schedule for OCSD to achieve compliance with the secondary treatment requirements contained in Order No. R8-2004-0062. This schedule is based on a detailed construction schedule developed by OCSD and requires compliance to be achieved by December 31, 2012. The TSO contains interim compliance dates, as well as interim effluent limits for biochemical oxygen demand (BOD) and suspended solids (SS).

Comments on the proposed permit/waste discharge requirements were received from three parties/agencies: Mr. Jim Colston, on behalf of OCSD; Mr. Don Schulz, on behalf of the Surfrider Foundation (Huntington Beach/Seal Beach Chapter); and Mr. Gerhardt Van Drie. Mr. Van Drie's letter indicates that his comments also address the proposed TSO. Copies of the comment letters are attached, together with written responses.

No changes to the proposed TSO appear to be necessary based on the comments received. No changes to the proposed NPDES permit/Waste Discharge Requirements are recommended in response to the comments by Mr. Van Drie. However, revisions to the draft permit/waste discharge requirements are proposed in response to the comments from Mr. Colston and Mr. Schulz. . These modifications are summarized below.

Jim Colston/OCSD comments:

1. *Revise time frames for pretreatment reporting consistent with 1998 permit.*

   The following dates have been revised in the final Order and permit: (1) Section E.4, paragraph 1 – change "September 1" to "October 31"; and (2) Section E.5, paragraph 1 – change "February 28" to "March 31", and "September 1" to "September 30". In conjunction, the following dates have been revised in the final M&RP and permit: (1) Section D.1, Annual Pretreatment Report due date – change "September 1" to "October 31"; and (2) Section D.1, SIU Compliance due date – change "September 1" to "September 30 (or October 31)".

2. *Remove water quality based effluent limitations for 11 Ocean Plan toxic substances, based on OCSD's interpretation of additional data and how that data should change the reasonable potential evaluation/determination.*

   The EPA and Regional Board evaluated the reasonable potential for Ocean Plan constituents using effluent data provided by OCSD for years 1998–2003. In this evaluation, the EPA and Regional Board used the statistical procedure for determining reasonable potential recommended in Section 3.3.2 of the TSD, as described in permit Findings 17–28 and the draft permit fact sheet. The procedure used by the EPA and Regional Board considered: (1) existing controls at the OCSD treatment facilities, as indicated by the quality of the effluent discharge; (2) the variability of pollutants in the effluent discharge, as statistically estimated using reasonable potential multipliers calculated directly from OCSD's effluent data (see permit Findings 25 and 26); (3) the sensitivity of test species to effluent toxicity, through an evaluation of toxicity test data collected under the 1998 permit that required periodic effluent screening for toxicity using vertebrates and invertebrates to evaluate species sensitivity to effluent toxicants; and (4) the allowable Ocean Plan dilution factor of 180:1 for the discharge (see permit Findings 24 and 26). For the 11 pollutants at issue (i.e., aldrin, benzidine, chordane, 3,3'-dichlorobenzidine, dieldrin, heptachlor, heptachlor epoxide, hexachlorobenzene, PAHs, PCBs, and toxaphene), the EPA and Regional Board determined that because reported effluent detection limits were too high to establish that the OCSD discharge would not exceed applicable Ocean Plan objectives following initial dilution of the effluent (at 180:1) and because these pollutants can be found in POTW effluents, a conservative reasonable potential decision was warranted and effluent limits to protect water quality were prescribed in the draft permit.

   For 3,3'-dichlorobenzidine, benzidine, and toxaphene - Because no sediment or fish tissue data were provided during the response to comments for 3,3'-dichlorobenzidine, benzidine, and toxaphene, and because limited amounts of these chemicals are still used in the U.S. and its territories, effluent limits for these constituents are retained in the final permit. The Regional Board and EPA will reassess this decision based on additional information provided by OCSD, as described in the permit.

For aldrin, dieldrin, heptachlor, and heptachlor epoxide and Chlordane - Although five of these insecticide compounds (excluding Chlordane) are measured at non-detect levels in the OCSD effluent that are higher than the permit limit and water quality objective, OCSD reports that while these compounds are detected in sediments within a few miles of the OCSD outfall 30 and 20 percent (%) of the time, respectively, sediment concentrations for these compounds fall below levels at which toxic effects are likely to occur. There are no 303(d) listings for these pollutants in the vicinity of the discharge. Based on this information, the EPA and Regional Board conclude that there is currently no reasonable potential for aldrin and dieldrin, and heptachlor and heptachlor epoxide in the OCSD discharge to exceed water quality standards; consequently, effluent limits for aldrin, dieldrin, heptachlor, and heptachlor epoxide are not included in the final permit. Also within a few miles of the outfall, OCSD reports that chlordane is detected in sediments 88% of the time and exceeds the threshold level for sensitive species 19% of the time. FDA fish tissue standards for chlordane are not exceeded in fish. Based on this information and because chlordane is known to occur in municipal effluents (e.g., City and County of Honolulu, Honouliuli and Sand Island WWTPs), a conservative reasonable potential decision is warranted and a chlordane effluent limit to protect water quality is retained in the final permit.

For Hexachlorobenzene (HCB) - because: (1) a potential source of HCB is found in chlorination treatment of wastewater; (2) non-detect levels for HCB reported for the OCSD effluent are higher than the permit limit and water quality objective; and (3) HCB is detected in sediments in the vicinity of the outfall, the EPA and Regional Board maintain that a conservative reasonable potential decision is warranted and an HCB effluent limit to protect water quality is retained in the final permit.

For PCBs, PAHs and TCDD equivalents - PCBs persist in the environment, the result of historical uses that no longer occur. They have low water solubility and are generally found in sediments and fish tissue. PAHs are trace organic contaminants that occur naturally in crude oil, coal and other hydrocarbons. Anthropogenic sources include the combustion of hydrocarbons and their presence in fossil fuel products, such as coal-tar pitch and asphalt. PAHs are slightly soluble in water. Binding to particulate matter, they tend to accumulate in sediments and concentrate in biota. When present in sufficient quantity, PAHs are toxic to aquatic life and carcinogenic to humans. The EPA and Regional Board maintain that a conservative reasonable potential decision for these ubiquitous pollutants is warranted and effluent limits for PCBs, PAHs, and TCDD equivalents to protect water quality are retained in the final permit.

3. *Clarify WET testing requirement when most sensitive test species is not available.*

Two sentences have been added at the end of Section B.2.a, paragraph 2, of the final Order and permit. The sentences read "If the most sensitive test species is/are not available, the presence of chronic toxicity shall be estimated using the second most sensitive test species from the toxicity test screening conducted for the current 24-month period. Such changes shall be noted on the discharge monitoring report (DMR)."

4. *Clarify paragraph A.5. of M&RP regarding quality assurance plan language per OCSD's recommended language in comment letter.*

Paragraph A.5 was replaced with the following language, which is substantively similar to the District's recommendation:

"The discharger shall have and implement an acceptable written quality assurance (QA) plan for laboratory analyses. For constituents listed in Table 1 – Minimum Levels - Volatile Chemicals; Table 2 – Minimum Levels - Semi Volatile Chemicals; Table 3 – Minimum Levels - Inorganics; Table 4 – Minimum Levels - Pesticides and PCBs, and Ammonia analysis, spike samples shall be performed in duplicate and conducted on a minimum of ten percent (10%) of the samples, or at least one sample per month, whichever is greater. Test precision will be determined by comparing the individual concentrations of the duplicate spike. For Oil and grease, duplicate chemical analyses shall be conducted on a minimum of 10% of the samples, or at least one sample per month, whichever is greater. A similar frequency shall be maintained for analyzing spiked samples. For physical parameters including Total suspended solids, Biochemical oxygen demand, Carbonaceous biochemical oxygen demand, Settleable solids, Turbidity, and pH, duplicate analyses shall be conducted on a minimum of 10% of the samples, or at least one sample per month, whichever is greater. When requested by the Regional Board or EPA, the discharger will participate in the NPDES discharge monitoring report QA performance study."

5. *Clarify data reporting requirements from OCSD's Supervisory Control and Data Acquisition (SCADA) system.*

Paragraph A.11.h of the M&RP was replaced with: "Electronic data and information regarding influent and effluent flow, pH and other constituents subject to monitoring or effluent limitations generated by the Supervisory Control and Data Acquisition (SCADA) System."

Don Schulz/Surfrider Foundation:

1. *Draft permit, pg. 9, par. 26, ". . . MDL (minimum detection limit) . . ." more accurately stated should be changed to "MDL (method detection limit)", as defined in the Ocean Plan.*

The draft permit, page 9, Finding 26, ". . . MDL (minimum detection limit) . . ." has been corrected, consistent with the administrative record (i.e., Excel file RP-OCSD_98-03_final.xl), to: ". . . maximum reported detection limit . . . ." Also Footnote 2 has been revised as follows: "Although 1998 - 2003 effluent concentrations for these organic constituents are at non-detect levels, their projected receiving water values based on OCSD's maximum reported detection limit are higher than *Table B* water quality

objectives in the Ocean Plan. These constituents are known to occur in POTW effluents. Consequently, WQBELs are prescribed as conservative safeguards for protecting water quality."

2. *Draft permit, pg. 15, sec. e, "Ocean Plan Table B Effluent Limitation for Protection of Human Health" should be changed to "Ocean Plan Table B Effluent Limitation for Protection of Human Health x Dm (minimum Dilution Factor)", because 180 is the dilution factor for the OCSD discharge.*

The requested change is not correct as it implies a dilution factor of 180:1 may be applied to the calculated water quality based effluent limitations specified in the table. However, to clarify that a dilution factor of 180:1 was used to calculate effluent limits based on Ocean Plan objectives, the following new footnote has been added following the titles of Tables A.1.d and A.1.e of the Order and permit:

"The effluent limitations for constituents based on objectives for the protection of aquatic life and human health specified in Table B of the Ocean Plan are calculated using a Dm of 180:1 and the following Ocean Plan equation: Ce = Co + Dm (Co – Cs). "Dm" is the minimum probable initial dilution used to calculate effluent limitations for non-conventional and toxic pollutant parameters, expressed as parts seawater per part wastewater, "Co" is the water quality objective to be met at the completion of initial dilution, "Cs" is the background seawater concentration, and "Ce" is the effluent limitation."

3. *The table values in the permit indicate a higher value of concentration limit precision than may be required.*

We acknowledge that the number of decimal places in the limits may be unnecessary, given the current state of analytical precision and accuracy. However, as analytical techniques improve over time, they may become more meaningful.

RECOMMENDATION:

Adopt Order No. R8-2004-0062, NPDES No. CA0110604 and Time Schedule Order No. R8-2004-0067, as presented.

Comments were solicited through a public notice printed in the *Orange County Register* on July 21, 2004 and from the following agencies:

U.S. Army District, Los Angeles, Corps of Engineers, Regulatory Branch
U.S. Fish and Wildlife Service - Carlsbad
State Water Resources Control Board, Office of the Chief Counsel – Jorge Leon
State of California, Office of the Attorney General - Marilyn H. Levin, Deputy Attorney General

State Water Resources Control Board, Division of Water Quality - James Maughan
California Department of Health Services, Santa Ana – Cor Shaffer
California Department of Health Services, Carpenteria – John Curphey
California Department of Health Services, Carpenteria - Jeff Stone
State Department of Water Resources - Glendale
State Department of Fish and Game - Long Beach
Santa Ana Watershed Project Authority - Joseph Grindstaff
Santa Ana Watershed Project Authority Member Agencies
Santa Ana River Dischargers Association – Rod Cruze
Orange County Water District - Nira Yamachika
Surfrider Foundation, Huntington/Long Beach Chapter
Orange County Coastkeeper- Garry Brown
Lawyers for Clean Water C/c San Francisco Baykeeper
Dr. Jack Skinner
Defend the Bay- Bob Caustin
Natural Resources Defense Council- David Beckman
City of Anaheim
City of Brea
City of Buena Park
Costa Mesa Sanitary District
City of Cypress
City of Fountain Valley
City of Fullerton
City of Garden Grove
City of Huntington Beach
Irvine Ranch Water District
City of La Habra
City of La Palma
County Sanitation Districts of Los Angeles County
City of Long Beach
Rossmoor/Los Alamitos Area Sewer District
Midway Cities Sanitation District
City of Newport Beach
City of Orange
City of Placentia
City of Santa Ana
City of Seal Beach
City of Stanton
Sunset Beach Sanitary District
City of Tustin
City of Villa Park
City of Westminster
Yorba Linda Water District
U. S. Marine Corps Air Station El Toro
U. S. Marine Corps Air Facility Tustin

Naval Weapons Station Seal Beach
Air Forces Reserve Center Los Alamitos
Mr. Gerhardt Van Drie-724 W. Pine Avenue, El Segundo Ca 90245

California Regional Water Quality Control Board
Santa Ana Region
3737 Main Street, Suite 500
Riverside, CA 92501-3348

and

U.S. Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, CA 94105-3901

FACT SHEET

July 21, 2004

The attached pages contain information concerning draft waste discharge requirements and a monitoring and reporting program, collectively, a National Pollutant Discharge Elimination System (NPDES) permit.

A. SUMMARY:

On July 21, 2004, the Regional Water Quality Control Board, Santa Ana Region (hereinafter Regional Board) and U.S. Environmental Protection Agency, Region IX (hereinafter EPA) jointly issued a public notice of proposed actions under Division 7 of the California Water Code and regulations thereunder, and the Clean Water Act (CWA) and regulations thereunder. The Regional Board and EPA are proposing to jointly reissue an NPDES permit and Waste Discharge Requirements to Orange County Sanitation District (hereinafter discharger, permittee, or OCSD) for Reclamation Plant No. 1 and Treatment Plant No. 2, a combined discharge of disinfected treated wastewater through an ocean outfall system to the Pacific Ocean.

Under California's Porter-Cologne Water Quality Control Act, California Regional Water Quality Control Boards issue waste discharge requirements which serve as NPDES permits. The Regional Board intents that its joint issuance of this NPDES permit with EPA will serve as its certification under CWA section 401 that any discharge pursuant to the permit will comply with CWA provisions at 33 U.S.C. 1311, 1312, 1313, 1316, and 1317. A joint public workshop will be held on August 13, 2004, in Santa Ana, California; and a joint public hearing will be held on September 17, 2004, in Loma Linda, California. The Regional Board and EPA will respond to public comments received through the close of the public comment period on September 17, 2004 and will issue a final NPDES permit incorporating applicable federal requirements and State Waste Discharge Requirements.

B. FACILITY DESCRIPTION:

The OCSD presently operates Reclamation Plant No. 1, located in the City of Fountain Valley, and Treatment Plant No. 2, located in Huntington Beach at the mouth of the Santa Ana River. The discharge from these facilities is currently regulated by Order No. 98-5, as modified by Order No. R8-2002-0055 (NPDES Permit No. CA0110604). This Order and permit has an

expiration date of June 8, 2003. Section 122.6, Title 40 (40 CFR) and Section 2235.4, Title 23, California Code of Regulations (CCR) state that an expired permit continues in force until the effective date of a new permit, provided the permittee has timely submitted a complete application for a new permit. On December 2, 2002, OCSD submitted an NPDES permit renewal application. Thus, the discharger's permit has been administratively extended until the Regional Board and EPA act on the new Waste Discharge Requirements and permit.

Reclamation Plant No. 1 is currently designed to treat 108 MGD of primary treated wastewater and 110 MGD of secondary treated effluent (30 MGD trickling filter plant under rehabilitation and 80 MGD conventional air-activated sludge plant). A maximum of 15 MGD of secondary treated effluent may be conveyed to the OCWD's Water Factory 21 where it receives tertiary treatment prior to groundwater recharge (barrier for seawater intrusion) and for direct reuse for irrigation and industrial process water (Green Acres Project). Ferric chloride and polymer can be added upstream of the primary sedimentation basins to provide for chemically enhanced primary treatment. The primary treatment system at Plant No. 1 is being increased to a design capacity of 198 MGD during this permit term. Chlorination facilities at Plant No. 1 provide for disinfection of the treated effluent with sodium hypochlorite (bleach) prior to discharge. Dechlorination occurs at Treatment Plant No. 2. Treated effluent (primary and secondary) not reclaimed is conveyed from Reclamation Plant No. 1 through interplant pipelines to the outfall booster pump complex at Treatment Plant No. 2 and discharged through the ocean outfall. Raw sewage not treated at Reclamation Plant No. 1 is conveyed to Treatment Plant No. 2 for treatment.

Treatment Plant No. 2 is currently designed to treat 168 MGD of primary treated wastewater and 90 MGD of secondary treated effluent (pure oxygen activated sludge). Various chemicals are used to provide for chemically enhanced primary treatment. Disinfection is achieved at various points within Plant No. 2; chlorination facilities use sodium hypochlorite (bleach) and the dechlorination facility uses sodium bisulfite. Blended treated effluent (primary and secondary) from Plant No. 2 is blended with primary and secondary treated effluent from Plant No. 1 and then discharged through the ocean outfall.

The combined discharge of Reclamation Plant No. 1 and Treatment Plant No. 2 is to the Pacific Ocean through an ocean outfall system. Discharge points are described as follows:

Discharge Serial No.	North Latitude	West Longitude	Description
001	33°34'36"	118°00'36"	120" Outfall: Primary discharge point to the Pacific Ocean terminating in a multi-port diffuser, approximately 4.5 miles (7,250 m) offshore from the mouth of the Santa Ana River, at a depth of 195 feet (60 m). The capacity at high tide is 480 MGD.

Discharge Serial No.	North Latitude	West Longitude	Description
002	33°36'56"	17°58'13"	78" Outfall: Emergency discharge point (deactivated ocean outfall) to the Pacific Ocean, approximately 1 mile (2,100 m) offshore from the mouth of the Santa Ana River, at a depth of 65 feet (20 m).
003	33°38'06"	117°57'20"	Two extreme emergency discharge points (overflow) to the Pacific Ocean at the Santa Ana River. The capacity is approximately 130 MGD.

Reclamation Plant No. 1 and Treatment Plant No. 2 receive domestic, commercial, and industrial wastewaters from 32 sewage collection agencies. The discharger has contractual agreements with Irvine Ranch Water District, County Sanitation Districts of Los Angeles County, Orange County Water District (OCWD), and the Santa Ana Watershed Project Authority and Member Agencies. The contractual agreements give the discharger the authority to implement and enforce the approved pretreatment program.

The discharger's wastewater treatment processes currently consist of the following:

RECLAMATION PLANT NO. 1			
Primary Treatment	Secondary Treatment	Disinfection	Solids Handling
Bar screens Aerated grit chambers Sedimentation basins	High-rate trickling filters (under rehabilitation to be completed by 2006) Activated sludge Secondary clarifiers	Chlorination	Dissolved air floatation thickening Anaerobic digestion Dewatering Land application and municipal solid waste landfill

TREATMENT PLANT NO. 2			
Primary Treatment	Secondary Treatment	Disinfection	Solids Handling
Bar screens Aerated grit chambers Sedimentation basins	Activated sludge Secondary clarifiers	Chlorination/ Dechlorination	Dissolved air floatation thickening Anaerobic digestion Dewatering Land application and municipal solid waste landfill

C. BASIS FOR EFFLUENT REQUIREMENTS:

Secondary Treatment Standards and Technology Based Effluent Limitations

Prior to this permit reissuance, the discharger has operated under an NPDES permit which incorporated a variance from federal secondary treatment standards for five-day biochemical oxygen demand (BOD_5) and suspended solids (SS), authorized under CWA section 301(h). On December 2, 2002, the discharger submitted a timely NPDES permit renewal application reflecting the OCSD Board of Directors' July 17, 2002 decision to withdraw the discharger's CWA section 301(h) variance and achieve federal secondary treatment standards at the earliest possible date. The application states that end-of-permit design BOD_5 and SS removal rates are 76 percent and 85 percent, respectively, and that the effluent is chlorinated and dechlorinated prior to discharge through the ocean outfall. End-of-permit design flow rates are 316 MGD of primary treated wastewater and 200 MGD of secondary treated wastewater. This application was updated by the discharger's 2003 supplemental permit renewal application (July 2003) and correspondence of May 13, 2004 from B. Anderson, OCSD General Manager, to W. Nastri, EPA Regional Administrator.

On May 13, 2004, the discharger requested the inclusion of effluent limitations for five-day carbonaceous biochemical oxygen demand ($CBOD_5$), as allowed by secondary treatment regulations at 40 CFR 133.102(a)(4), for the period following the completion of expanded secondary treatment facilities. $CBOD_5$ limitations will apply to the final effluent during partial or full nitrification at OCSD's secondary treatment facilities, where effluent nitrification is being planned to reduce ammonia toxicity associated with wastewater treatment and brine reject flow from the Groundwater Replenishment System (a major regional water reclamation project). As nitrifying bacteria use oxygen to degrade nitrogenous compounds otherwise not significantly removed in the secondary treatment process, higher oxygen demand values for the final effluent will result. Consequently, the use of $CBOD_5$ effluent limits will ensure that federal secondary treatment standards for POTWs are achieved while allowing the discharger to use the treatment process of nitrification to reduce ammonia toxicity in the discharged effluent and comply with Ocean Plan requirements for acute and chronic toxicity.

The draft Order and permit contain the following effluent limitations based on federal secondary treatment standards pursuant to Section 301(b) of the CWA and its implementing regulations:

Constituent	**Units**	**30-day Average**	**7-day Average**
Biochemical Oxygen Demand (5-day) (BOD_5)[1]	mg/l lbs/day	30. 69,555	45. 104,333
		The 30-day average percent removal shall not be less than 85 percent.	
Carbonaceous Biochemical Oxygen Demand (5-day) ($CBOD_5$)	mg/l lbs/day	25. 57,963	40. 92,740
		The 30-day average percent removal shall not be less than 85 percent.	
Suspended Solids (SS)	mg/l lbs/day	30. 69,555	45. 104,333
		The 30-day average percent removal shall not be less than 85 percent.	
pH	pH units	Within limit of 6.0 to 9.0 at all times.	

The discharger's end-of-permit (i.e., 2009) effluent mass emission rates are calculated using an end-of-permit annual average influent flow of 278 MGD. As described in the application, OCSD cannot meet these effluent quality requirements with existing treatment facilities, and full compliance with secondary treatment requirements for all of the flow is not anticipated to occur until 2013. Appendix Q of the application summarizes projected changes in effluent quality and flows associated with the ramping-up of secondary treatment facilities to achieve maximum performance from both existing and new treatment facilities during this permit term.

As described, above, this Order and permit contain effluent limitations based upon federal secondary treatment standards, as required by 40 CFR 125.3 and 40 CFR 133. EPA and the Regional Board also expect that compliance with secondary treatment requirements governing the OCSD discharge will be addressed by a complaint to be filed and a consent decree to be lodged shortly after the effective date of this Order and permit. EPA and the Regional Board expect that the consent decree will establish a schedule by which OCSD will complete the planning, design, construction, and operation of facilities necessary to attain compliance with secondary treatment requirements in this Order and permit, and will establish interim effluent

[1] In lieu of the parameter BOD_5 and the BOD_5 levels specified for effluent quality in this table, the parameter $CBOD_5$ and the $CBOD_5$ levels specified for effluent quality in this table may be substituted and reported by the discharger.

limits for BOD_5 and TSS. Pursuant to 28 CFR 50.7, the public will be given notice and an opportunity to comment upon the consent decree before it becomes effective.

In 1999, the OCSD adopted a comprehensive 20-year master plan of capital facilities, including expansion and rehabilitation, entitled "OCSD Strategic Plan". Four years later, in conjunction with the OCSD Board of Directors' 2002 decision to achieve federal secondary treatment standards, OCSD adopted "Interim Strategic Plan Update", a comprehensive revision to the strategic plan. This strategic plan update addressed the additional needs for refurbishing, rehabilitation, and new construction, in order to provide adequate facilities to upgrade the effluent treatment level to secondary treatment standards, and is the basis for the discharger's December 2002 NPDES permit renewal application.

Water Quality Standards and Water Quality Based Effluent Limitations

A revised *Water Quality Control Plan for Ocean Waters of California, California Ocean Plan* (Ocean Plan) became effective on December 3, 2001. The Ocean Plan contains beneficial uses and water quality objectives for ocean waters of the State. Ocean waters of the State are the territorial marine waters of the State as defined by California law to the extent that these waters are outside of enclosed bays, estuaries, and coastal lagoons. If a discharge outside of the territorial waters of the State could affect the quality of waters of the State, the discharge may be regulated to assure no violation of the Ocean Plan will occur in ocean waters. The requirements contained in the Order and permit are necessary to assure no violation of the Ocean Plan will occur in ocean waters of the State.

A revised *Water Quality Control Plan, Santa Ana River Basin* (Basin Plan) became effective on January 24, 1995. Subsequently, the Basin Plan has been amended by Regional Board Resolution Nos. 97-20, 98-100, 98-101, 99-10, 00-27, and R8-2004-0001. The Basin Plan contains beneficial uses and water quality objectives for waters in the Santa Ana Region. The existing or potential beneficial uses of the Tidal Prism of the Santa Ana River (to within 1,000 feet of Victoria Street) include: water contact recreation; non-contact water recreation; commercial and sportfishing; wildlife habitat; rare, threatened or endangered species; and marine habitat. The Nearshore Zone of the Pacific Ocean is within a zone bounded by the shoreline and a distance of 1,000 feet from the shoreline or the 30-foot depth contour, whichever is further from the shoreline. The existing or potential beneficial uses of the Nearshore Zone include: industrial service supply; navigation; water contact recreation; non-contact water recreation; commercial and sportfishing; preservation of biological habitats of special significance; wildlife habitat; rare, threatened or endangered species; spawning, reproduction, and development; marine habitat; and shellfish harvesting. The Offshore Zone consists of waters between the Nearshore Zone and the limit of ocean waters of the State. The existing or potential beneficial uses of the Offshore Zone of the Pacific Ocean include: industrial service supply; navigation; water contact recreation; non-contact water recreation; commercial and sportfishing; wildlife habitat; rare, threatened or endangered species; spawning, reproduction, and development; and marine habitat. The requirements contained in this Order and permit are necessary to implement the Basin Plan.

On July 19, 2002, the Regional Board determined, and EPA agreed, that it is appropriate to apply water quality standards for bacterial indicators throughout the water column in the Offshore Zone to assure that the OCSD discharge does not pose a threat to water contact recreational uses in both nearshore and offshore waters. The discharger's NPDES permit and Waste Discharge Requirements were amended accordingly by the Regional Board and EPA (Order No. R8-2002-0055). To meet this requirement, OCSD has operated temporary chlorination/dechlorination facilities, using sodium hypochlorite (chlorine bleach) and sodium bisulfite, since August 2002. OCSD is conducting an investigation of alternative long-term disinfection methods for the discharge as part of its Effluent Pathogen Reduction Alternative Plan Study.

Effluent limitations for conventional, non-conventional, and toxic pollutant parameters are established based on Table A effluent limitations (technology based) and Table B water quality objectives in the Ocean Plan. Mass emission rate effluent limitations for these pollutant parameters are based on a projected end-of-permit influent flow of 278 MGD. The minimum probable initial dilution (Dm) used to calculate water quality based effluent limitations for non-conventional and toxic pollutant parameters based on Table B water quality objectives is 180:1. Dm is expressed as parts seawater per part wastewater.

The 1998 permit, as modified in 2002, contains effluent limitations for the following non-conventional and toxic pollutant parameters in Table B of the Ocean Plan: total chlorine residual, acute toxicity, chronic toxicity, aldrin, chlordane, bis(2-ethylhexyl)phthalate, DDT, heptachlor, hexachlorobenzene, PAHs, and toxaphene. For the draft permit, the need for effluent limitations based on water quality objectives in Table B of the Ocean Plan was re-evaluated in accordance with 40 CFR 122.44(d) and EPA guidance for statistically determining the "reasonable potential" for a discharged pollutant to exceed an objective, as outlined in the revised *Technical Support Document for Water Quality-based Toxics Control* (TSD; EPA/505/2-90-001, 1991). This statistical approach combines knowledge of effluent variability (as estimated by a coefficient of variation) with the uncertainty due to a limited number of effluent data to estimate a maximum effluent value at a high level of confidence. This estimated maximum effluent value is calculated as the 99 percent confidence level of the 99th percentile based on a lognormal distribution of daily effluent values. Projected receiving water values (based on the estimated maximum effluent value or the reported maximum effluent value and Dm), can then be compared to the appropriate objective to determine the potential for an exceedance of that objective and the need for a water quality based effluent limitation.

The Regional Board and EPA examined effluent data provided by the discharger for years 1998 - 2003. A reported maximum effluent value and reported maximum MDL (minimum detection limit) were identified for each pollutant. These data were then used to calculate pollutant-specific reasonable potential multipliers. After considering Dm, projected receiving water concentrations were used to determine that: acute toxicity, chronic toxicity, and 12 organic pollutants[2] (i.e., aldrin, benzidine, chlordane, 3,3'-dichlorobenzidine, dieldrin, heptachlor,

[2] Although 1998 - 2003 effluent concentrations for these organic constituents are at non-detect levels, their projected receiving water values based on OCSD's reported maximum MDLs are higher than Table B water quality objectives in the Ocean Plan. These constituents are known to occur in POTW effluents. Consequently, WQBELs are prescribed as conservative safeguards for protecting water quality.

heptachlor epoxide, hexachlorobenzene, PAHs, PCBs, TCDD equivalents, and toxaphene) showed the potential to exceed their respective objective, and required effluent limitations. Water quality based effluent limitations for these pollutants were calculated using procedures outlined in the Ocean Plan.

As previously described, OCSD has operated temporary chlorination/dechlorination facilities, adding sodium hypochlorite (chlorine bleach) and sodium bisulfite to wastestreams, since August 2002. Because wastewater disinfection with chlorine usually produces a chlorine residual, and because chlorine and its reaction byproducts are highly toxic to aquatic life, water quality based effluent limits for total chlorine residual based on Ocean Plan requirements are included in this permit.

The effluent limitations for constituents based on objectives for the protection of aquatic life and human health specified in Table B of the Ocean Plan are calculated using a Dm of 180:1 and the following Ocean Plan equation: Ce = Co + Dm (Co - Cs). "Ce" is the effluent limitation (mg/l); "Co" is the water quality objective to be met at the completion of initial dilution (mg/l); and "Cs" is the background seawater concentration (mg/l).

The draft Order and permit contain the following technology based effluent limitations based on Table A of the Ocean Plan:

Constituent	**Units**	**30-day Average**	**7-day Average**	**Maximum at any time**
Grease and Oil	mg/l lbs/day	25. 57,963	40. 92,740	75. 173,889
Suspended Solids	n/a	As 30-day average, 75 percent removal from influent stream or 60 mg/l, whichever rate is higher.		
Settleable Solids	Ml/l	1.0	1.5	3.0
Turbidity	NTU	75.	100.	225.
pH	pH units	Within limit of 6.0 to 9.0 at all times.		

The draft Order and permit contain the following water quality based effluent limitations for protection of marine aquatic life based on Table B of the Ocean Plan:

Constituent	Units	6-month Median	Daily Maximum	Instantaneous Maximum
Total Chlorine Residual	mg/l lbs/day	0.36 834	1.45 3,361	10.86 25,179
Acute Toxicity	TUa	n/a	5.7	n/a
Chronic Toxicity	TUc	n/a	181	n/a
Radioactivity	Not to exceed limits specified in Title 17, Division 1, Chapter 5, Subchapter 4, Group 3, Article 3, Section 30253 of the California Code of Regulations. Reference to Section 30253 is prospective, including future changes to any incorporated provisions of federal law, as the changes take effect.			

The draft Order and permit contain the following water quality based effluent limitations for protection of human health based on Table B of the Ocean Plan:

Constituent	Units	30-day Average
Aldrin	ug/l lbs/day	0.00398 0.0092
Benzidine	ug/l lbs/day	0.01249 0.0290
Chlordane	ug/l lbs/day	0.00416 0.0097
3,3'-dichlorobenzidine	ug/l lbs/day	1.4661 3.3992
Dieldrin	ug/l lbs/day	0.00724 0.0168
Heptachlor	ug/l lbs/day	0.0091 0.0210
Heptachlor epoxide	ug/l lbs/day	0.0036 0.0084
Hexachlorobenzene	ug/l lbs/day	0.0380 0.0881
PAHs	ug/l	1.5928

Constituent	Units	30-day Average
	lbs/day	3.6929
PCBs	ug/l lbs/day	0.0034 0.0080
TCDD equivalents	ug/l lbs/day	0.000000706 0.000001637
Toxaphene	ug/l lbs/day	0.03801 0.0881

As described above, the draft permit proposes effluent limits for 12 organic constituents: aldrin, benzidine, chlordane, 3,3'-dichlorobenzidine, dieldrin, heptachlor, heptachlor epoxide, hexachlorobenzene, PAHs, PCBs, TCDD equivalents, and toxaphene. The discharger has proposed and the draft permit requires the discharger to conduct a strategic process study evaluating currently available information and collecting additional data to determine the occurrence of these constituents in the OCSD effluent and ocean environment. The results from this study will be used to evaluate the need for pollutant management plans. The Regional Board and EPA may use this information to re-evaluate the need for effluent limitations for the 12 organic constituents during the permit term. Please note that during the public comment period for the draft permit, the Regional Board and EPA may receive and review information related to these constituents. Based on their review and consideration of the administrative record for final permit issuance, the Regional Board and EPA may continue to conclude that a constituent shows the potential to exceed a water quality objective and the water quality based effluent limitation, proposed in the above table, is required in the final permit. Alternatively, the Regional Board and EPA may conclude that a constituent does not show the potential to exceed a water quality objective, and, consequently, no water quality based effluent limitation for that constituent will be required in the final permit. The rational for such decisions will be explained and documented by the Regional Board and EPA in the response to comments for the final permit.

The mass emission effluent limitations (in lbs/day) for all constituents were determined using a projected end-of-permit annual average influent flow of 278 MGD and the following Ocean Plan equation: lbs/day = (8.34) (Ce) (Q). "Ce" is the concentration effluent limitation in mg/l and "Q" is the flow rate in MGD.

D. BIOSOLIDS/SLUDGE AND PRETREATMENT REQUIREMENTS:

The draft permit contains biosolids/sludge management requirements consistent with CWA requirements and 40 CFR 257, 258, and 503. On February 19, 1993, the EPA issued a final rule for the use and disposal of sewage sludge (40 CFR 503). This rule requires that producers of sewage sludge meet certain reporting, handling, and disposal requirements. The State has not been delegated the authority to implement this program, therefore, EPA is the implementing agency.

The draft permit contains pretreatment requirements consistent with applicable effluent limitations, national standards of performance, and toxic and pretreatment effluent standards established pursuant to Sections 208(b), 301, 302, 303(d), 304, 306, 307, 403, 404, 405, and 501 of the CWA, and amendments thereto. This permit contains requirements for the implementation of an effective pretreatment program pursuant to Section 307 of the CWA; 40 CFR 35 and 403; and/or Section 2233, Title 23, California Code of Regulations. The permit application states that 126 significant industrial users and 243 categorical industrial users discharge to the treatment works; OCSD also receives treated waste from remedial activities at the Stringfellow Superfund Site. Under this permit, the discharger will continue to implement its existing nonindustrial source control program and public education program that have been in effect since 1986.

E. INDUSTRIAL STORMWATER REQUIREMENTS:

In accordance with Section 402(p) of the CWA, the EPA has published regulations for stormwater runoff (see also 40 CFR 122, 123, and 124). Under these regulations, industrial facilities, including POTW sites, are required to obtain NPDES permits for stormwater discharges. According to the discharger, stormwater runoff is managed by internal drainage systems at Reclamation Plant No. 1 and Treatment Plant No. 2. Stormwater runoff is captured, treated, and discharged to the Pacific Ocean with the treated wastewater. Accordingly, storm water runoff at Reclamation Plant No. 1 and Treatment Plant No. 2 will be regulated under this permit, and a separate NPDES permit for stormwater discharges from these sites is not required.

F. OCEAN DISCHARGE CRITERIA:

The OCSD discharge is subject to the requirements of Section 403(c) of the CWA and its implementing regulations at 40 CFR 125, Subpart M. These requirements apply to point source discharges to territorial seas, the contiguous zone and oceans, and allow for more stringent effluent limitations or permit conditions when necessary to protect the marine environment. The Regional Board and EPA have considered the impact of the discharge pursuant to Section 403(c) and find that the discharge will not cause unreasonable degradation of the marine environment.

G. MONITORING AND REPORTING PROGRAM:

The draft permit requires frequent influent and effluent monitoring for conventional, non-conventional, and priority toxic pollutants. Biosolids/sludge monitoring, record keeping, and reporting requirements are consistent with federal and State requirements. Pretreatment monitoring, record keeping, and reporting requirements are consistent with applicable NPDES requirements.

Pursuant to 40 CFR 125.123(d)(2), the draft permit includes a monitoring and reporting program which is sufficient to assess the impact of the discharge on water, sediment, and biological quality, including analyses of the bioaccumulation and/or persistent impact on aquatic life due to

the discharge. In 1998, the receiving water monitoring program was revised to reallocate the discharger's monitoring effort into three components to address crucial physical, chemical, and biological processes not addressed by earlier monitoring programs, and provide a regional framework for interpreting discharge-related effects. These three components are retained from the 1998 permit and are described as follows:

- **Core Monitoring.** Shoreline monitoring and offshore water quality, sediment, fish community, and bioaccumulation monitoring are conducted to evaluate compliance with this permit, State water quality standards, and federal criteria.

- **Strategic Process Studies.** Each year, the discharger will conduct strategic process studies that address specific receiving water quality, discharge impacts, and ocean processes in the area of the discharge. The scope of these studies will be determined by the discharger, in coordination with the Regional Board and EPA. Studies will be approved by the Regional Board and EPA prior to implementation by the discharger.

- **Regional Monitoring Activities.** The discharger will participate in regional scale projects in association with groups such as the Southern California Coastal Water Research Project, the Coastal Conservancy, and the Southern California Coastal Ocean Observing System. These projects are designed to provide regional perspectives for the evaluation of wastewater discharges and other sources of contaminants to the Southern California Bight.

H. ANTIDEGRADATION ANALYSIS:

The Regional Board and EPA have considered antidegradation pursuant to 40 CFR 131.12 and State Board Resolution No. 68-16, *Statement of Policy with Respect to Maintaining High Quality of Waters in California*, (known collectively as "antidegradation" policies) and find that the discharge is consistent with those provisions.

Moreover, to address the uncertainty due to potential increases in toxic pollutant loadings from the discharge to the marine environment during the five-year permit term, and to establish a framework for evaluating the need for an antidegradation analysis to determine compliance with State and federal antidegradation requirements at the time of permit reissuance, 12-month average mass emission benchmarks have been established for effluent discharged through Discharge Serial No. 001 [see Monitoring and Reporting Program (M&RP) No. R8-2004-0062.]. The mass emission benchmarks (in metric tons per year; MT/yr) for the OCSD discharge were determined based on 1990 through 1994 effluent concentrations, using the concentration associated with the 95^{th} percentile of the 4-day average distribution of daily effluent concentrations (Ce), the discharger's projected end-of-permit flow of 278 MGD (Q), and the following equation: MT/yr = (Ce ug/l) (Q 10^6 gal/day) (3.785 l/gal) (365 days/yr) (1 MT/10^{12} ug). These mass emission benchmarks are not enforceable water quality based effluent limitations. They may be re-evaluated and revised during the five-year permit term.

I. MAGNUSON-STEVENS AND ENDANGERED SPECIES ACTS:

The EPA's reissuance of the OCSD permit is subject to requirements of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and Section 7 of the Endangered Species Act (ESA). The EPA is reviewing information related to: (1) essential fish habitat and managed and associated species, and (2) threatened and endangered species and their designated critical habitats, in the vicinity of the OCSD outfalls). Based on this and other relevant information, EPA is evaluating whether there are effects on essential fish habitat and managed and associated species protected under the MSA, or on threatened and endangered species and their designated critical habitats protected under the ESA. (Previous determinations by the National Marine Fisheries Service and U.S. Fish and Wildlife Service (collectively, the Services) have found the discharge consistent with ESA requirements.) Based on the outcome of this analysis, EPA may engage in consultation with the Services during, and subsequent to, this permit reissuance. The EPA may decide that changes to the permit are warranted based on the results of the completed consultation, and a reopener provision to this effect has been included in the permit.

J. INFORMATION AND COPYING:

The Administrative Record, which includes the draft permit, fact sheet, comments received, permit application, and other relevant documents, is available for inspection and copying at the Regional Board and EPA addresses below, Monday through Friday (excluding holidays), between 9:00 a.m. and 3:00 p.m., beginning July 21, 2004 through the close of the public comment period on September 17, 2004. The draft permit can also be viewed at and/or downloaded from the Regional Board's website at *www.swrcb.ca.gov/rwqcb8*, beginning July 21, 2004.

K. PUBLIC WORKSHOP AND PUBLIC HEARING:

Interested persons are invited by the Regional Board and EPA to attend a public workshop and public hearing and express their views on the draft permit. The joint public workshop regarding the draft permit will be held as follows:

DATE:	August 13, 2004
TIME:	9:00 a.m.
PLACE:	City of Santa Ana City Council Chamber 22 Civic Center Plaza Santa Ana, California

The joint public hearing regarding the draft permit will be held as follows:

DATE: September 17, 2004
TIME: 9:00 a.m.
PLACE: City Council Chambers of Loma Linda
25541 Barton Road
Loma Linda, California

To assure the accuracy of the record, all oral statements should be submitted also in writing. Please note that time limitations of 15 minutes or less will be imposed on presentations, unless otherwise determined by the Regional Board Chair and EPA Hearing Officer. Although the public comment period will remain open through the close of the public hearing on September 17, 2004, persons wishing to comment upon the draft permit are strongly encouraged to submit their comments in writing by August 20, 2004 to facilitate consideration of the comments by the Regional Board and EPA. The Regional Board will consider adoption of State Waste Discharge Requirements at the public hearing on September 17th. If adopted by the Regional Board, State Waste Discharge Requirements will become effective upon issuance of a final determination on the NPDES permit by EPA.

L. WRITTEN COMMENTS:

Interested persons are invited to submit written comments on the draft permit and fact sheet. Written comments should be submitted either in person or by mail to the attention of Jun Martirez at the Regional Board and Robyn Stuber at the EPA, at the following addresses:

Mr. Jun Martirez
California Regional Water Quality Control Board
Santa Ana Region
3737 Main Street, Suite 500
Riverside, CA 92501-3348
Telephone: (951) 782-4130

Ms. Robyn Stuber
U.S. Environmental Protection Agency
Region IX, WTR-5
75 Hawthorne Street
San Francisco, CA 94105-3901

Telephone: (415) 972-3524

All timely comments received through the close of the public comment period on September 17, 2004, will be retained and considered in the formulation of the final determination regarding the draft permit.

M. FEDERAL PROCEDURES FOR FINAL PERMIT DECISION:

When a final NPDES permit is issued by EPA, it will become effective 33 days following the date it is mailed to the discharger, unless a request for review is filed. If a request for review of the federal NPDES permit is filed, only those permit conditions that are uncontested will go into effect pending disposition of the request for review. Requests for review of the federal permit must be filed within 33 days following the date the final permit is mailed and must meet the requirements of 40 CFR 124.19. All requests for review of the federal permit should be addressed to the Environmental Appeals Board, as directed in the draft permit findings. Those persons filing a request for review must have filed comments on the draft permit, or participated in the public workshop or hearing. Otherwise, any such request for review may be filed only to the extent of changes from the draft to the final permit decision.

N. REGISTER OF INTERESTED PERSONS:

Any person interested in a particular application or group of applications may leave his name, address, and phone number as part of the file for an application.